STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

Α

С

NR

Auger Flight

Core Barrel

Not Recorded

16 - 30

> 30

Hard

Very Stiff

WOR - Weight of Rod

WOH - Weight of Hammer

> 50

Very Dense

**ENGLISH** 



PROJECT NAME **DERRY-LONDONDERRY 13065** N/A BRIDGE NO. DESCRIPTION Connector Rd & Misc Municipal Rd Improvements

**GROUNDWATER EQUIPMENT** SAMPLER CASING CORE TYPE: NW BOTTOM BOTTOM OF CASING OF HOLE DEPTH ELEV. DATE TIME SIZE I.D. (in): 1.375 (ft) (ft) 3 HAMMER WT. (lb): 140 DRILL RIG 7/22/20 11:30 am 8.8 412.2

BORING NO. **B194** SHEET NO. \_ OF\_ STA. 1027+10 OFF. LT 19 Connector Rd BASELINE\_ ELEVATION (ft) \_\_ START/END 7/20/20 / 7/22/20 DRILLER \_\_\_\_Courser/Kibbee Doug Rogers INSPECTOR \_

	7/22/20	11:30 am	8.8	412.2	10.0	13.6	HAMMER	. ,	140	DRILL RIG		CLASSIFIER	DRR		
	7/22/20	12:00 pm	12:00 pm 9.8 411.2 10.0 13.6 9:00 am 12.9 408.1 10.0 13.6			R FALL (in):	30	CME 45-C Trac				41683			
-	7/23/20		-		10.0		HAMMER	TYPE:	Automatic			<u> </u>			
	DEPTH (ft)	DEPTH ELEVATION 0.5 ft NUMBER RECOVER (ft) [%]				DEPTH RANGE (ft)		FIELD	CLASSIFICAT	ION	AND REMARKS		STRATUM SYMBOL		
	- 0 -	0.3	420.8	1 5 5	S1	1.2 [60]	0.0	Loose gravel	Dark greyish brown, fibrous TOPSOIL Loose, dark yellowish brown and greyish brown, FINE SAND, some gravel, some silt to "silty", little coarse-medium sand, occasional severely weathered rock fragment						
				14 12 11 12	S2	1.3 [65]	2.0	Mediu	m dense, gre	eyish brown, silty	FINE sever	SAND, some gravel, ely weathered rock fragr	ment		
1:11:15 AM TB-12	- 5 -			21 22 39 30	S3	1.1 [55]	5.0	some-				/ FINE SAND/fine sandy and, occasional weather			
GPJ 7/28/2020 17										-GLACI	AL TII	L-			
2020BORINGS.	- 10 <i>-</i>	43 59 50/0.2 S4 1.0 [83]				10.0	Light olive brown and olive grey, silty FINE SAND, some-little gravel, little coarse-medium sand, small cobble at 11.2'								
NHDOT_I93EXIT4A	– 15 <i>–</i>			33 55 61 60/0.3	S5	1.3 [72]	13.5	little co				E SAND, some-little graverely-very severely wea			
065 (EXIT 4A)\\19119067_									Botto	om of Exploration	@ 1	5.3 ft (El. 405.7)			
RRY-LONDONDERRY 13(	- 20 -														
S:MATERIALS-RESEARCH/GINTWPROJECTS/DERRY/DERRY-LONDONDERRY 13065 (EXIT 4A)/19119067_NHDOT_193EXIT4A_2020BORINGS.GPJ 7/28/2020 11:11:15 AM TB-12	- 25 -														
S:\MATERIALS-RESEARCH\G	Sampler S SL T U O A	Large Sp Thin Wa	Split Spoo boon (O.D.= Il Tube bed Piston Id Rod		Blows/f 0 - 2 - 5 - 9 - 1 16 - 3	1 4 5 8 1 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	E SOILS Consistend Very Soft Soft Medium Si Stiff Very Stiff	0 5 tiff 11	- 4 - 10 - 30 - 50	ESIVE SOILS  Apparent Density Very Loose Loose Medium Dense Dense Very Dense	Ca Lo So Lit	apitalized Soil Name Miswer Case Adjective 35 ame 20 ttle 10	roportion ajor Compo 5% - 50% 0% - 35% 0% - 20% 1% - 10%	nent	

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

2 - 4 5 - 8

9 - 15

16 - 30

> 30

Soft

Stiff

Hard

Very Stiff

Medium Stiff

Т

U

0

Α

С

NR

Thin Wall Tube

Open End Rod

Auger Flight

Core Barrel

Not Recorded

Undisturbed Piston



PROJECT NAME **DERRY-LONDONDERRY 13065** N/A BRIDGE NO. Connector Rd & Misc Municipal Rd Improvements DESCRIPTION

**GROUNDWATER** SAMPLER CORE **EQUIPMENT CASING** TYPE: NX BOTTOM BOTTOM OF CASING OF HOLE DEPTH ELEV. DATE TIME SIZE I.D. (in): 1.375 1.875 (ft) (ft) 3 HAMMED W/T

BORING NO. **B195** SHEET NO. \_ OF. STA. 1029+99 OFF. LT 34 Connector Rd BASELINE\_ ELEVATION (ft) \_\_ START/END \_\_\_\_\_7/16/20 / 7/16/20 DRILLER \_\_ J. Kibbee (NHDOT) INSPECTOR Doug Rogers

20% - 35%

10% - 20%

1% - 10%

**ENGLISH** 

- [	7/16/20	12:30 pm	15.4	375.6	5.0	16.5	HAMMER		140	DRILL RIG		CLASSIFIER _	DRR	
}	7/16/20	1:00 pm	15.4	375.6	5.0	16.5	HAMMER	R FALL (in):	30 Automatic	CME 45-C Trac	ck rig	EAST/NORTH (ft)	1071489/1	141745
	DEPTH (ft)		CHANGE (ft)	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY	DEPTH RANGE	TIFE.		CLASSIFICAT	ION	AND REMARKS		STRATUM SYMBOL
	- 0 -	DEPTH 0.2	390.8		HOWBER	(ft) [%]	(ft) 0.0			prown, fibrous TO	5001			51111502
		0.9	390.1	WOH 1 2	S1	1.4 [70]	0.0	_ Dark y	silt to "silty", few roo -	/				
				2			2.0	little co	oarse sand, t	race medium sar -GLACI	nd AL TII		ne gravel,	
		4.0	000.7					Note:	observed abr	ove 3" drill casing rupt washwater re ry from approxima	eturn d	color change to dark	greyish	
B-12	- 5 -	4.3	386.7							PROXIMATE BE				
IALS-RESEARCHIGINTWIPROJECTS/DERRY/DERRY-LONDONDERRY 13065 (EXIT 4A)/19119067_NHDOT_193EXIT4A_2020BORINGS.GPJ 7/28/2020 11:11:16 AM TB-12	3			18 38 50/0.3	S2	1.0 [77]	5.0			n w/ trace dark ye d, ROCK and RO		h brown, completely RAGMENTS	and very	
0 11:11:							6.5	Moder	ately hard to	hard moderately	/ to sli	ightly weathered, mo	derately to	
7/28/202					C1	3.6 [72]		slightly SCHIS	rfractured, d T. Occasion	ark greyish browi al small quartz in	n to g	rey, fine-grained, MIC on present. Zone of vo o approximately 7.9'.	CA	
GS.GPJ	- 10 -					(,		Joints/ All join	fractures are t surfaces ar	closely spaced a re discolored/stail	and sl	nallow to moderately ew are silt-coated.	dipping	
20BORIN							11.5 11.5	RQD:	2.4 / 5.0 = 48	3%				
T4A_202								Hard,	very slightly t	to moderately we	athere	ed, slightly to modera	tely	
T_193EX					C2	4.8 [96]		Occas	ionally interb	edded w/ QUAR	TŽITE	ned, MICA SCHIST. Most all joint surfac ly spaced and shallo		
7_NHDO	– 15 <i>–</i>							Isolate		al fracture extend			-	
11906							16.5							
4A)\19									Botto	om of Exploration	@ 1	6.5 ft (El. 374.5)		
35 (EXIT														
RY 130	- 20 -													
OONDEF														
ZY-LON														
RYNDERF														
TS\DERF	- 25 -													
ROJECT														
INTWP														
ARCH/G														
RESE	Sampler S	Identifica	ition I Split Spoo	ın.	Blows/fe	COHESIVE	SOILS Consisten	OV DI	NON-COHE	ESIVE SOILS Apparent Density		oil <u>Descriptions</u> apitalized Soil Name	Proportion Major Compo	onent
IALS-F	SL T		oon (O.D.=		0 -	1	Very Soft	- 1 -	- 4	Very Loose	Lo	ower Case Adjective	35% - 50%	Y ICI IL

5 - 10

11 - 30

31 - 50

WOR - Weight of Rod

WOH - Weight of Hammer

> 50

Loose

Dense

Medium Dense

Very Dense

Some

Little

Trace

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

Α

С

NR

Auger Flight

Core Barrel

Not Recorded



PROJECT NAME **DERRY-LONDONDERRY 13065** N/A BRIDGE NO. DESCRIPTION Connector Rd & Misc Municipal Rd Improvements

**GROUNDWATER EQUIPMENT** SAMPLER CORE CASING BOTTOM BOTTOM TYPE:
OF CASING OF HOLE SIZE I.D. (in): DEPTH ELEV. (ft) NX DATE 1 375 1.875

BORING NO. **B196** SHEET NO. \_ OF\_ STA. 1033+06 OFF. LT 41 Connector Rd BASELINE\_ ELEVATION (ft) \_\_\_ 7/16/20 / 7/16/20 START/END\_ DRILLER \_\_ J. Kibbee (NHDOT) INSPECTOR Doug Rogers

	DATE	TIME	(ft)	(ft)	OF CASING	OF HOLE	SIZE I.D.		1.375	3	1.875	INSPECTOR _	Doug Rog	gers
[	7/16/20	12:30 pm	13.1	378.7	N/A	16.0	HAMMER		140	DRIL	L RIG	CLASSIFIER _	DRR	
	7/16/20	1:00 pm	13.2	378.6	N/A	16.0	HAMMER	CME 45-C Track rig = 4.5-7.40 DTU (#) 10717						141803
[							HAMMER	TYPE:	Automatic	21VIL 70°C	, much my	EAST/NUKTH (II)	)	1 1 1 0 0 0
	DEPTH	STRATUM (	CHANGE (ft)	BLOWS	SAMPLE	SAMPLER								STRATUM
	(ft)	DEPTH	ELEVATION	PER 0.5 ft	NUMBER	RECOVERY			FIELD	CLASSIF	ICATION	AND REMARKS		SYMBOL
-	- 0 -					(ft) [%]	(ft) 0.0							
	-	0.2	391.6	WOH			0.0		ark greyish b					$\sim\sim$
		0.7	391.1	2	S1	1.1 [55]						silt to "silty", trace	Γ	1
				2				l \ ,	-medium sai					Δ Δ
				4	2		2.0					own, FINE SAND, so	ome siit,	
								nitie-ii	ace gravel, tr		LACIAL TI			0 4 4
								Advan	ced hole to 5			LL-		4
												at approximately 4.4	' from	A .
									ish brown to					
12		4.4	387.4					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				CK SURFACE-		<b>1</b>
함	- 5 -			16			5.0	Dawlea						$\mathcal{K}/\mathcal{K}$
₹				50	S2	0.7 [70]	0.0		and ROCK I			to very severely we	amered	K///X//
7							6.0	ROCK	and ROCK I	RAGIVIEN	13			
=======================================								Mediu	m to modera	telv hard. s	everely to n	noderately severely	weathered.	$\rangle \rangle \rangle \rangle \rangle \rangle$
<u>;</u>												sh brown to brownish		$\mathbb{K}/\mathbb{K}$
ဂ္ဂ								fine-gr	ained, MĬCA	SCHIST. Í	solateď thin	veins of quartz pres	sent. Entire	
7202								core is	discolored v	v/ isolated o	racking an	d pitting. Joints/ḟract	ures are	K//X4
/28					C1	2.8 [56]						to steeply dipping. F	oliation is	
7									where disce					<b>Y//</b>
ONDERRY 13065 (EXIT 4A)\19119067_NHDOT_193EXIT4A_2020BORINGS.GPJ 7/28/2020 11:11:17 AM_TB-12										ement pena	alizes 0.8' o	of core due to severe	e loss in	N////A
GS.	– 10 –							streng		20/			_	$\rangle\rangle\rangle\rangle\rangle$
Ž							11.0	RQD:	0.8 / 5.0 = 16	5%				<b>XXXX</b>
8							11.0							
201														K//X4
7								Moder	ately hard to	hard mode	erately seve	ere to moderately we	athered	
44												h brown to grey, fine		
ΣI					00	E 0 [400]						to moderately close		N/ <del>XX</del> /Y
93E					C2	5.0 [100]						vertical fracture from		
핕									tending to ap					$\mathbb{K}/\mathbb{K}$
8	– 15 <i>–</i>								3.1 / 5.0 = 62					$\mathbb{K}/\mathbb{K}$
뒬	- 13 -													K//X4
790							16.0							<i>[]X[]]</i>
190									Botto	m of Evolo	ration @ 1	6.0 ft (El. 375.8)		
191									Dolla	JIII OI EXPIO	ration @ i	0.0 it (Li. 373.0)		
Ā														
<b>∓</b>														
$\overline{\mathbf{X}}$														
35 (														
306														
∑l	- 20 -													
띪														
삙														
ģ														
칡														
刋														
Š														
崱														
[₹														
띪														
흲	- 25 -													
띩	_0													
픠														
읾														
₽														
틹														
5														
핑														
S:/MATERIALS-RESEARCH/GINTW/PROJECTS/DERRY/DERRY-LOND														
SE	<u>Sampler</u>	<u>Identifica</u>	<u>ition</u>		1	COHESIV	E SOILS		NON-COH	ESIVE SOILS	<u>s</u>	oil Descriptions	<b>Proportion</b>	
퓠	S		Split Spoo		Blows/f		Consisten	- 1 -	ows/foot (N)	Apparent De		apitalized Soil Name	Major Compo	onent
ALS	SL		oon (O.D.=	= 3 in)	1 -		Very Soft	0	-	Very Loose		ower Case Adjective	35% - 50%	
띪	T	Thin Wal			1		Soft	5		Loose	<b>I</b>	ome	20% - 35%	
AT	U		bed Piston		1		Medium S			Medium Der	<b>I</b>	ttle	10% - 20%	
M	0	Open En Auger Fli			9 - 1		Stiff Verv Stiff	31	- 50 50	Dense Verv Dense		race	1% - 10%	
ω.	Α	Auger FII	urit		1 10 - 3	U	very Stiff	>	JU	verv Dense				

WOR - Weight of Rod

WOH - Weight of Hammer

> 50

Very Dense

**ENGLISH** 

Hard

Very Stiff

> 30

STATE OF NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION MATERIALS & RESEARCH BUREAU - GEOTECHNICAL SECTION

Auger Flight

Core Barrel

Not Recorded

С

NR

16 - 30

> 30

Very Stiff

Hard

Very Dense

**ENGLISH** 

WOR - Weight of Rod

WOH - Weight of Hammer



PROJECT NAME **DERRY-LONDONDERRY 13065** N/A BRIDGE NO. DESCRIPTION Connector Rd & Misc Municipal Rd Improvements

**GROUNDWATER EQUIPMENT** SAMPLER **CASING** CORE DATE TIME DEPTH ELEV. BOTTOM BOTTOM TYPE: NX

BORING NO. **B197** SHEET NO. \_ OF\_ STA. 1034+94 OFF. LT 53 Connector Rd BASELINE \_ ELEVATION (ft) \_\_\_ START/END 7/15/20 / 7/15/20 DRILLER J. Kibbee (NHDOT)

	DATE	TIME	DEPTH (ft)	(ft)	OF CASING	DE HOLE	SIZE I.D.	(in):	1.375	3	1.875	INCREATOR	Doug Ro	nore
- }	7/45/00	10.05		` '			HAMMER		140			INSPECTOR _		<del>Jeis</del>
ŀ	7/15/20	12:05 pm		371.8	5.0	18.0		R FALL (in):	30		<u>L RIG</u>	CLASSIFIER _	DRR	
ł	7/15/20	1:00 pm	13.4 15.4	370.8	N/A	18.0 18.0	HAMMER	. ,	Automatic	CME 45-0	C Track rig	EAST/NORTH (ft)	1071974/	141845
ŀ	7/16/20	8:30 am	-	368.8	N/A			IIFE.	Automatic					
	DEPTH (ft)		CHANGE (ft) ELEVATION	BLOWS PER 0.5 ft	SAMPLE NUMBER	SAMPLER RECOVERY (ft) [%]	DEPTH RANGE (ft)		FIELD	CLASSIF	ICATION	AND REMARKS		STRATUM SYMBOL
ı	- 0 -	0.3	383.9	WOH			0.0	¬ Dark o	reyish browr	. fibrous TO	OPSOIL			<b>≈</b> ~≈
		0.6	383.6	WOH		0 0 [40]		Dark v	ellowish brov	vn, FINE S	AND, some	silt, w/ root fibers -S	SUBSOIL-	Ki J
				1	S1	0.8 [40]						prown, FINE SAND, s		A A
				2	2		2.0	. 10 - 11 - 12 ا	y", little grave					آ خد آ
														10 9 0
								Advan	ced hole w/	R" roller hit i	into alacial	till soils; occasional s	mall	
									encountered		into giaciai	tili 30li3, 000a3loriai 3	man	100
								OODDIC	, choodinore,	4				( 1 - 1
										-0	SLACIAL TI	11-		Δ. Δ.
TB-12	_													
F	– 5 –			10			5.0	Dark	rovich brown	and grove	w/ traces of	light olive brown, ver	v sovoroly	
₹				12	S2	0.8 [67]						ENTS, some-little fine		4
9		6.2	378.0	25/0.2			6.2	10 0011				OCK SURFACE-	Sanu	\$77,00
7									-AF	PROXINA	IE DEDRU	CK SUKFACE-		
7								Advan	ced to 8 0' in	to very sev	ere to seve	rely weathered BEDF	OCK: hit	Y//>X/
20									slow and ste		ere to seve	iely weathered bebi	COCIC, DIL	
3/20							8.0	Cutting	, slow and st	cady				
7/2								Moder	ately hard to	hard, seve	rely and mo	derately severely to	slightly	<b>X</b> //XX
깂												ured, dark grevish bro		
Ö	- 10 <del>-</del>							grey, f	ine-grained,	MÍCA SCHI	IST. Óccas	ional thin vein of quar	tz	<b>X</b> //X/
ğ					C1	4.8 [96]		Joints/	fractures are	very close	to closely	spaced and shallow to	0	
瀀					"	1.0 [00]						s extend from 8.0-8.7		<b>Y//</b>
鮗												resent. Sudden, total	loss of	XXXXX
020											imately 8.7	to end of run.		
A								RQD:	0.8 / 5.0 = 16	5%				<b>*</b> //*
<u>+</u>							13.0							
Μ̈́							13.0							
<u>6</u>								⊔ord •	vory cliabtly t	o cliabtly w	roathorod r	noderately fractured t	o cound	
5												CA SCHIST. Few sma		Y//>X/
밁	– 15 <i>–</i>											nt. Zone of very sever		
Z					C2	4.9 [98]		near-c	omplete wea	thering an	d extreme t	racturing from 15.6-1	6 0'	
1906												aced and shallow dipp		
119								ioint si	urfaces are s	ilt-coated a	nd/or disco	lored due to iron stair	nina.	
119									3.7 / 5.0 = 74				J	<b>X</b> ///X/
4 (4														
ξ							18.0							\(\sigma\sigma\sigma\)
Θ									Botto	om of Explo	ration @ 1	8.0 ft (El. 366.2)		
965														
13														
싫	– 20 –													
띩														
칡														
흿														
ର୍														
Հ∣														
띪														
삙														
싫														
삙														
S.	– 25 –													
S														
PR														
ا≧														
Ä														
욁														
RC														
S:MATERIALS-RESEARCHIGINTWIPROJECTS/DERRY/DERRY-LONDONDERRY 13065 (EXIT 4A)/19119067_NHDOT_193EXIT4A_2020BORINGS.GPJ 7/28/2020 11:11:18 AM	Sample-	Identifica	ation .	l .		COHESIVE	SOILS		NON-COLI	ESIVE SOILS		oil Descriptions	Proportion	1
띯	Sampler S		ation d Split Spoo	n	Blows/fe		Consisten	cv   Ri	ows/foot (N)	Apparent De		apitalized Soil Name	Major Compo	nent
$\frac{1}{2}$	SL						Very Soft	<u> </u>		Very Loose		ower Case Adjective	35% - 50%	J. 101 IL
₹	T	3 1 ( )		Soft	5		Loose	I .	ome	20% - 35%				
削	Ü		bed Piston		1		Medium St	1 -	- 30	Medium Der	I	ittle	10% - 20%	
ΜĀ	O					Stiff		- 50	Dense	I .	race	1% - 10%		
<i>[</i> 2	۸	Augor El	iaht		16 3	٥ ١	Jony Stiff	1 ~	50	Vory Donco				